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Jan Van Sinderen

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NXP, B.V.

NXP INTELLECTUAL PROPERTY & LICENSING

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EXAMINER

NGUYEN, DUC M

ART UNIT

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NOTIFICATION DATE

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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ip.department.us@nxp.com



### **DETAILED ACTION**

This action is in response to applicant's response filed on 4/20/10. Claims 1-9, 11-16 are now pending in the present application.

#### ***Response to Amendment***

1. The amendment filed 11/16/09 is objected to under 35 U.S.C. 132(a) because it introduces new matter (claim 11) into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

“the mixer-circuit and polyphase filter being configured and arranged to suppress the video data signal from at least one of said output signals”.

Here, although the specification discloses “unwanted signals” are suppressed, there is no disclosure that would describe or mention “unwanted signals” comprises “video data signal”.

Applicant is required to cancel the new matter in the reply to this Office Action.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim **11** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

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skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 11, the claim recites the limitation “suppress the video data signal from at least one of said output signals”, this limitation contains new subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

### ***Claim Rejections - 35 USC 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **1, 11, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Lee** (US Pat. Number **6,483,355**).

Regarding claim **1**, **Lee** teaches a mixer-system comprising:

an amplitude detector (see Figs. 7-8 and col. 7, lines 55-57 regarding peak detector 746a);

a mixer-circuit including:

at least a first mixer and a second mixer configured to frequency translate signals comprising at least one of audio information and video information (see Fig. 7 regarding

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mixers 720), and where the receiver would implicitly receive at least one of audio information and video information as claimed; and

a first forward circuit path coupled to an output of the first mixer, and including an amplifier-circuit having a gain control input coupled to an output of the amplitude detector (see Fig. 7 regarding amplifier circuit 740A); and

a second forward circuit path coupled to an output of the second mixer, including an amplifier-circuit having a gain independent of the amplitude detector (see Fig. 1 regarding amplifier circuit 740B, which is clearly not depend on the amplitude detector 746a). Similarly, the gain of amplifier circuit 740A would not depend on the amplitude detector 746b; and

wherein the mixer system is configured to perform amplitude corrections during said frequency translating of said signals (see Fig. 7 and ), where the feedback signal applied to the VGAs (see col. 8, lines 15-21) would either increase or decrease amplitude of the signal in amplifier circuits 740, and would “perform amplitude corrections during said frequency translating of said signals” as claimed ;

Therefore, the claimed limitations are made obvious by Lee.

Regarding claim **11**, **Lee** discloses an apparatus comprising an oscillator LO, an amplifier circuit (compensator circuit 50) being connected between the polyphase filter 760 and the at least two mixers 720 (see Fig. 7 and col. 6, lines 53-65), which mixer-system comprises a mixer- circuit with at least two mixers for frequency translating signals comprising an amplitude detector (see Fig. 7 regarding peak detectors 746 and col. 7, lines 34-57) for making amplitude corrections (see Figs. 7-8 regarding first AGC

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loop 740 col. 8, lines 15-21) for at least one output signal of said mixer-circuit, wherein said amplitude corrections are made during said frequency translating of said signals (see Figs. 7-8 regarding feedback feature of first AGC loop 740), and the mixer-circuit and polyphase filter being configured and arranged to suppress unwanted signal from at least one of said output signals (see Fig. 8 and col. 8, lines 5-8 regarding Gm-C channel selection filter which would “suppress unwanted signals” such as adjacent channel blocker or image frequency signals).

However, **Lee** does not disclose the receive RF signal comprises audio and video information. However, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations *Ex parte Masham 2* USPQ2d 1647 1987).

Regarding claim **15**, the claim is rejected for the same reason as set forth in claim 1 above. However, **Lee** does not disclose the receive RF signal comprises audio and video information. However, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations *Ex parte Masham 2* USPQ2d 1647 1987).

6. Claims **12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Lee** in view of **Soltanian** (US Pat. Number **6,700,514**).

Regarding claim **12**, **Lee** would teach all the claimed limitations (see Figs. 7-8 and col. 7, line 34-col. 8, line 21) except for utilizing a non-differential signaling instead of a differential signaling for mixers and VGAs. However, utilizing a differential signaling or non-differential signaling would be an obvious design choice as disclosed by **Soltanian** (see col. 6, lines 15-28). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Lee** to utilize a differential signaling as suggested by **Soltanian**, thereby providing each amplifier circuit having at least a first input and a first output coupled to each other via a first adjustable feedback-gain element (Fig. 7, DC gain adjustment of VGA3 via loop filter), and having at least a second input and a second output coupled to each other via a second adjustable feedback-gain element (Fig. 7, DC offset canceling loop) as claimed, as an alternative of obvious design choice.

Therefore, by simply providing a differential signaling for mixers and VGAs in Fig. 7 of **Lee**, the claimed limitations are made obvious by **Lee** in view of **Soltanian**.

Regarding claim **13**, the claim is rejected for the same reason as set forth in claim 12 above. In addition, **Lee** as modified for a differential signaling would teach at least one output coupled to a control input of the first adjustable feedback-gain element as claimed (see Fig. 7 regarding DC gain adjustment of VGA3 via loop filter 746c).

Regarding claim **14**, the claim is rejected for the same reason as set forth in claim 13 above. In addition, **Lee** as modified for a differential signaling would teach at

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least one output coupled to said second adjustable feedback-gain element as claimed (see Fig. 7 regarding DC offset canceling loop).

7. Claims **1, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Pickett et al** (US Patent Number **6,771,945**) in view of **Ichihara** (US Pat. Number **7,206,360**).

Regarding claim 1, **Pickett** teaches a mixer-system comprising:

an amplitude detector (see Fig. 1 regarding amplifier 50 and col. 4, lines 16-20), where it is clear that amplifier 50 would be used to detect the offset (or imbalance or difference) of the differential signals and would work in the similar way to the amplitude comparison circuit 21 having amplitude detectors 51, 52 as disclosed by **Ichihara** (see Fig. 4 and col. 5, lines 50-62, noting that rectifier is an amplitude detector);

a mixer-circuit including:

at least a first mixer and a second mixer configured to frequency translate signals comprising at least one of audio information and video information (see Fig. 1 regarding mixer 12 which would obviously teach two mixers in order to produce two differential output signals), and where the receiver would implicitly receive at least one of audio information and video information as claimed; and

a first forward circuit path coupled to an output of the first mixer, and including an amplifier-circuit having a gain control input coupled to an output of the amplitude detector (see Fig. 1 regarding amplifier 28 and col. 2, lines 34-37, col. 4, lines 23-32); and



a second forward circuit path coupled to an output of the second mixer, including an amplifier-circuit having a gain independent of the amplitude detector (see Fig. 1 regarding amplifier 18 and col. 2, lines 23-25, which is clearly not depend on the amplitude detector) ; and

wherein the mixer system is configured to perform amplitude corrections during said frequency translating of said signals (see col. 4, lines 23-40), where the feedback signal applied to the negative input of amplifier 28 would increase or decrease amplitude of the signal in amplifier chain 15, and would “perform amplitude corrections during said frequency translating of said signals” as claimed ;

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Pickett** to further utilize an amplitude detector as claimed, as an alternative of obvious design choice for detecting the amplitude of a signal before processing the detected signal.

Regarding claim **15**, the claim is rejected for the same reason as set forth in claim 1 above. However, **Pickett** does not disclose the receive RF signal comprises audio and video information. However, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations *Ex parte Masham* 2 USPQ2d 1647 1987).

8. Claims **2-5** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Pickett** in view of **Ichihara** and further in view of **Lee** (US Pat. Number **6,483,355**).

Regarding claim **2**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, **Pickett** as modified in view of **Ichihara** would teach said amplitude detector comprises at least two inputs coupled to at least two outputs of said mixer-circuit and at least one output coupled to at least one control input of said mixer-circuit as claimed (see Ichihara, Fig. 4).

As to the limitation regarding a polyphase filter, **Lee** teaches a polyphase filter coupled to at least one output of the amplifier circuit for suppressing data in at least one of the output signals of amplifier circuit (see Fig. 7 and col. 6, lines 53-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Pickett** to utilize a poly-phase filter for suppressing adjacent interference signals as suggested by Lee, for further improving the performance of the system.

Regarding claim **3**, the claim is rejected for the same reason as set forth in claim 2 above. In addition, **Pickett** as modified in view of **Ichihara** would teach said amplitude detector comprises at least two level detectors each comprising an output coupled to an input of an amplifier (see Ichihara, Fig. 4 and col. 5, lines 50-62).

Regarding claim **4**, the claim is rejected for the same reason as set forth in claim 2 above. In addition, **Pickett** as modified in view of **Ichihara** would teach a further amplitude detector and a common mode correction as claimed (see Pickett, Fig. 1 regarding the common-mode correction amplifiers 42, 44 and amplitude comparison amplifier 48 and col. 3, lines 28-67).

Regarding claim **5**, the claim is rejected for the same reason as set forth in claim 4 above. In addition, **Pickett** as modified in view of **Ichihara** would teach amplitude

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detectors (Ichihara's teaching) with input and output connections as claimed (see Pickett, Fig. 1 regarding common mode correction amplifiers 42, 44 and amplitude comparison amplifier 48 for their input/output connections).

9. Claim **11** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Ichihara** in view of **Lee**.

Regarding claim **11**, **Ichihara** would obviously teach all the claimed limitations (see Figs. 1-2, 4 and their related disclosure) except for a polyphase filter. However, **Lee** teaches a polyphase filter coupled to at least one output of the amplifier circuit for suppressing adjacent interference signals in at least one of the output signals of amplifier circuit (see Fig. 7 and col. 6, lines 53-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Ichihara** to utilize a poly-phase filter for suppressing adjacent interference signals as suggested by **Lee**, for further improving the performance of the system.

#### ***Allowable Subject Matter***

10. Claims **6-9** are allowed.

#### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-9, 11-16 have been considered but are moot in view of the new ground(s) of rejection.

As to applicant's argument regarding Pickett ('945 reference) and Ichihara ('360 reference),

Applicant contends that

Applicant respectfully traverses the § 103(a) rejection of claims 1-5 and 15 because the asserted combination of references would be inoperable. Consistent with the recent Supreme Court decision, M.P.E.P. § 2143.01 states that "[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *Citing In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984); *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (U.S. 2007). ("[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be non-obvious."). The Office Action's proposed modification to the '945 reference replaces the DC offset detection correction circuit with the amplitude detection circuit of the '360 reference. The intended purpose of the '945 reference and the asserted component 50 is DC offset correction. *See, e.g.*, Col. 1:5-7 (the field of invention includes the "method for reducing DC offsets"); and Col. 4:16-39.

In response, the examiner asserts that the Office Action does not replace the DC offset detection correction circuit with the amplitude detection circuit of the '360 reference. In fact, the Office Action proposes that the DC offset detection correction circuit would obviously comprise an amplitude detection circuit in order to detect DC components so that their difference would provide a DC offset information. Here, please note that the DC component of a sinusoidal signal (i.e.,  $A \cos \omega t$ ) would be the amplitude  $A$  of the sinusoidal signal. Therefore, for a sinusoidal signal, DC component or Amplitude would be the same. In fact, as clearly disclosed by **Pickett** (see **col. 4, lines 23-39**), the DC offset correction circuit is performed so that the output, namely **amplitude**, of amplifier chain 14 and amplifier chain 15 would be **equal**. Therefore, the DC offset correction circuit for making amplitudes equal would read on the claimed "amplitude correction" circuit.

Applicant further contends that

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The amplitude detection circuit of the '360 reference rectifies the signal provided to the circuit. A rectified signal no longer conveys DC offset information because the negative signal values are rectified.

In response, the examiner asserts that the rectifier is used to detect amplitude (see Ichihara, col. 5, lines 50-53), which would be the same as detecting a DC component of a sinusoidal signal. The difference of amplitudes (or DC components) would be called DC offset.

Therefore, the proposed modification would no longer compensate for DC offset. Accordingly, the '945 reference would be inoperable for its intended purpose. See, e.g., Col 1:5-7 ("method for reducing DC offsets"). Accordingly the § 103 (a) rejections of claims 1-5 and 15 are improper and should be withdrawn.

In response, the examiner asserts that Pickett ('945 reference) and Ichihara ('360 reference) both direct to a method for making the output of I signal equal to the output of the Q signal, namely amplitude correction or DC offset correction as an alternative of "terminology". Therefore, the combination is proper.

For foregoing reasons, the examiner believes that the pending claims (1-5, 11-15) are not allowable over the cited prior art.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See the attached PTO-892.

13. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

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(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,  
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner  
should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893,  
Monday-Thursday (9:00 AM - 5:00 PM).

Or to Nay Maung (Supervisor) whose telephone number is (571) 272-7882.

/Duc M. Nguyen/

Primary Examiner, Art Unit 2618

June 22, 2010